CLAIMS

What is claimed is:

1. A method for separating detection channels, comprising the steps of:

providing a sample which is equipped with at least two fluorescent dyes

ascertaining an emission spectrum of the at least two fluorescent dyes, wherein the sample being excitable with different wavelengths and the number of different wavelengths is not exceeding the number of fluorescent dyes provided in the sample;

determining separation points of the emission spectrum in terms of wavelength, in order to allocate the corresponding portion of the emission spectrum to a specific channel in each case and to sense it with that channel; and

adjusting the separation of the at least two channels in such a way that the portions of the entire emission spectrum ascertained on the basis of the separation points are conveyed respectively to different channels for detection.

2. The method as defined in Claim 1, wherein the separation points of the portions of the emission spectrum are defined by the intersection points of the individual spectra of each fluorescent dye provided in the sample.

3. The method as defined in Claim 1, wherein the separation points of the portions of the emission spectrum are ascertained by obtaining the difference between the measured emission spectrum of the biological sample and an emission spectrum at one excitation wavelength.

4. The method as defined in Claim 3, wherein from the difference between the measured emission spectrum of the biological sample and an emission spectrum at one excitation wavelength, the integral of the square of the absolute value is obtained, and the separation points are determined by way of the minimum of the integral.

5. The method as defined in Claim 1, wherein detection of the one respective channel is performed with at least one detector element.

6. The method as defined in Claim 5, wherein the detector element comprises several detector elements grouped together.

7. The method as defined in Claim 6, wherein signals of several detectors of a multi-anode photomultiplier are grouped together into one channel.

8. The method as defined in Claim 5, wherein the at least one detector element is a photomultiplier.

9. The method as defined in Claim 1, wherein a selection means is provided for adjusting the separation of the at least two channels.

10. The method as defined in Claim 9, wherein the selection means is a micromirror array.

11. The method as defined in Claim 9, wherein the selection means is an SP module.

12. The method as defined in Claim 11, wherein the SP module encompasses a mirror stop arrangement with which, on the basis of the ascertained separation points, the mirror stop arrangement is adjusted in such a way that each of the wavelength regions defined by the separation points is allocated respectively to one individual channel.

13. The method as defined in Claim 1, wherein the separation points are ascertained by means of a computer system.

14. The method as defined in Claim 13, wherein the data of the ascertained separation points are presented to the user on a display.

15. The method as defined in Claim 14, wherein the user adjusts the mirror stop arrangement on the basis of the data presented on the display.

16. The method as defined in Claim 13, wherein the mirror stop arrangement or the micromirror array is automatically adjusted, on the basis of the separation points ascertained by the computer system, in such a way that the wavelength regions determined by the separation points are each allocated to one channel.